



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,090	07/24/2003	Stephen B. Brown	7162-68	9927
39207	7590	10/19/2004		
SACCO & ASSOCIATES, PA P.O. BOX 30999 PALM BEACH GARDENS, FL 33420-0999			EXAMINER ALEMU, EPHREM	
			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,090

Applicant(s)

BROWN ET AL.

Examiner

Ephrem Alemu

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7-16, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 17, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/03, 9/03 & 9/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 7-10, 16, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Alexeff et al. (US Pub. No. 2004/0130497).

Re claims 1 and 10, Alexeff discloses an electromagnetic horn antenna (i.e., reconfigurable horn antenna (Figs. 4, 5) comprising:

a horn housing (90) having a throat portion (92), a tapered portion (94a, 96, 94b) and an aperture (Figs. 4, 5);

at least one cavity structure (i.e. 94a, 96, 94b) defined within the horn housing, the cavity structure comprising at least one portion (96) formed of a dielectric material (i.e., fluid filled bulb 96 when fluid is not energized) (Figs. 4, 5; Page 2, Paragraph [0023]);

a conductive fluid (i.e., fluid contains in bulb 96) and a fluid control system (not shown for energizing fluid contain in bulb 96), the fluid control system selectively controlling at least one of a volume and a position of the conductive fluid contained within the at least one cavity structure for dynamically modifying at least one electrical characteristic (i.e., the length of the horn) of the electromagnetic horn antenna (Figs. 4, 5; Page 2, Paragraph [0023]; Page 3, Paragraph [0029]).

Art Unit: 2821

Therefore, given Alexeff's electromagnetic horn antenna (i.e., reconfigurable horn antenna) as described above, the method for modifying at least one electrical characteristic of a horn antenna as claimed in claim 1 is inevitable.

Re claims 2, 3, 7, 9, 18 and 20, Alexeff further shows selectively varying a profile or selectively varying a position of at least one conductive inner surface of the horn antenna or changing at least an aperture diameter of the horn antenna by controlling (i.e., energizing or non energizing) the conductive fluid within the fluid bulb 96 (Figs. 4, 5; Page 2, Paragraph [0023]).

Re claims 8 and 16, Alexeff further shows the electrical characteristic is selected from the group consisting of an input impedance, a radiation pattern, a gain, and an antenna beamwidth (Page 1, Paragraph [0006]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexeff et al. (US Pub. No. 2004/0130497).

Re claim 5, although, Alexeff discloses all the claimed invention as applied to claim 1 above, Alexeff does not show providing a fluid filled bulb (96) around the throat region (92) for changing at least one internal dimension of the throat region. However, it is considered to be obvious to one having ordinary skill in the art at the time the invention was made to provide fluid filled bulb (96) as taught by Alexeff around the throat region of Alexeff's horn antenna for no

Art Unit: 2821

other reason than changing at least one internal dimension of the throat region (Figs. 4, 5; Page 3, Paragraphs [0029] – [0031]).

5. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexeff et al. (US Pub. No. 2004/0130497) in view of Amyotte (US 6,396,453).

Re claims 11-15, Alexeff discloses all the claimed limitations as applied to claim 10 above except the horn antenna having corrugated surface in a manner claimed in claims 11-15.

However, Amyotte discloses that horn antenna having corrugated surface provide a good pattern symmetry and cross performance over a much wider bandwidth or multiple separate bands (Figs. 3, 4, 8, 9; Col. 7, lines 26-48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Alexeff horn antenna by providing corrugated surface as taught by Amyotte for the purpose of improving the performance of the horn antenna over a much wider bandwidth or multiple separate bands.

Allowable Subject Matter

6. Claims 4, 6, 17, 19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fail to teach or suggest, alone or in combination, the following limitations “wherein the selectively changing step further comprises changing a flare angle of the horn antenna” as claimed in claim 4; “ wherein the selectively changing step further comprises

Art Unit: 2821

changing at least a corrugation geometry of the horn antenna” as claimed in claim 6; “wherein the control system controls the volume of the conductive fluid to change a flare angle of the horn antenna” as claimed in claim 17; “wherein the control system controls the conductive fluid to change at least a corrugation geometry of the horn antenna” as claimed in claim 19; and “wherein the control system controls the conductive fluid to convert an inner conductive surface of the horn antenna from a smooth profile to a corrugated profile” as claimed in claim 21.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Parrikar et al. (6,522,306); Volman (US 6,441,795); Lier et al. (US 4,783,665); and Lovick, Jr. (US 4,255,753); teach similar inventive subject matter.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Application/Control Number: 10/626,090

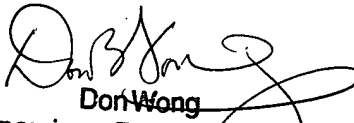
Page 6

Art Unit: 2821

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

10-15-04


Don Wong
Supervisory Patent Examiner
Technology Center 2800